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WEATHER AND CROP CONDITIONS IN HUNGARY 1 AUGUST 1953-9 APRIL 1954

[Comment: The following report on weather and crop conditions in Hungary, 1 August 1953-9 April 1954, consists of two parts. Part I presents the available weather reports published in a Hungarian periodical and newspaper (14 articles from the periodical Magyar Mezogazdasag and one from the newspaper Esti Budapest) for the period 1 August 1953-26 February 1954.

Part II comprises seven articles (five published in the newspaper Nepszava and two in the emigre weekly newspaper Uj Hungaria) discussing crop conditions and the lag in spring work. The five articles from the Hungarian press cover such subjects as the need for speeding up fall and spring sowing and the need for improving the unsatisfactory work of the tractor stations. The two Uj Hungaria articles mention a shortage of plows and other agricultural equipment, the damage caused by the withdrawal of peasants from the producers' cooperatives, the prospect of a catastrophic crop failure, and the distribution of seed for spring sowing at exhorbitant interest rates.

From the material of this report it appears certain that the fall drought and the abnormally cold winter combined to cause extensive damage to fall-sown grains and that spring planting has been seriously delayed.

Temperatures are given in degrees centigrade. Numbers in parentheses refer to appended sources.]

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I. WEATHER REPORTS

1-26 August 1953

After a generally warm and dry July, August was characterized by considerable fluctuation in temperature and by continued drought.

During the first third of the month, diurnal temperatures were below the average, while later they rose above the average.

On 1 August the temperature was 25-27 degrees, approximately corresponding to the average. During the next week, due to cool winds accompanied by rains, the temperature dropped, and diurnal temperatures generally did not exceed 20-22 degrees, reaching only 18-19 degrees in the west of the country. After 9 August the temperature rose again. During the second third of the month it was above 25 degrees everywhere and reached 30-32 degrees in numerous areas. The diurnal high in August was on the 21st, when the temperature reached 30-33 degrees throughout Hungary. The heat ended abruptly, and on the 22d the temperature did not rise above 16-20 degrees in most localities. This cooling was later followed by renewed warmer weather.

Nocturnal cooling was also variable and usually considerable. During the first half of the month, nocturnal minimums were generally below the average of 15-16 degrees. The temperature frequently dropped to 10-12 degrees, and around the 8th it stood as low as 6-8 degrees. At the same time, ground temperatures of 4-5 degrees were reported in numerous localities. During the second half of the month, the nocturnal temperature seldom dropped below 10 degrees and frequently it stood as high as 15 degrees.

Precipitation was generally little. The total amount of rainfall up to the 26th exceeded the average for the month only in a few localities in the western and northeastern border areas. In general, precipitation totaled more than 50 percent of the average for August, although in the drier areas the rainfall remained below 50 percent of the average.

The distribution of precipitation in order of time was as follows:

During the period 1-8 August, rain fell every day but was country-wide only on the 3d. This period was followed by 12 dry days. The rainfall began again on the 21st and amounted to 10-30 millimeters in many parts of the country on the 22d. On the 23rd, the eastern half of the country received abundant precipitation.(1) (See Figure 1.)

27 August-10 September 1953

During the 2 weeks under review the weather was mostly dry. It was clear and warm during the day but frequently cold at night, and fall frosts set in at an unusually early date.

Diurnal temperatures were generally above the average. As a result of air currents accompanied by rain, the temperature on 28 August fell from 25 degrees to 15-18 degrees. This cooling, however, was again followed by warm days, and by 4 September the temperature rose to at least 25-30 degrees everywhere and even as high as 32 degrees in certain localities. After the 4th, the temperature fell somewhat, but the weather continued dry, clear, and sunny.

At first, the nights were mild; later, however, cooling was pronounced. Between 26 August and 6 September the nocturnal minimums generally fluctuated between 12 and 15 degrees. After 6 September, nocturnal cooling became intense, and on the night of the 7th the temperature dropped to 1-3 degrees in several areas. At Szolnok, the air cooled off below the freezing point, and frost of 1-2 degrees below zero was reported from the western and southern parts of Transdanubia and north of the Koros River east of the Tisza. On the following night the cooling was more moderate, and a ground temperature of zero was reported only from the vicinity of Pecs.

Precipitation was abundant only during the first days. On 26 August it rained in Transdanubia, and on the 27th and 28th the entire country received abundant precipitation. The amount on each day exceeded 10 millimeters in extensive areas and even 30 millimeters in the northeast. Thereafter, a small amount of rain fell in parts of Transdanubia on 4 and 5 September. The other days were entirely dry.

The rainfall between 26 and 28 August improved the precipitation balance sheet, and the precipitation map published in our last issue [Figure 1] is accordingly modified as follows: Total precipitation during the month of August remained below 50 millimeters only in certain localities of the Vertes Mountain area in Transdanubia and of the Great Plain between the Danube and Tisza rivers. In most parts of the country the rainfall totaled 50-80 millimeters, with the exception of certain storm centers such as Salgotarjan (143 mm), Szentgotthard (137 mm), Hodmezovasarhely (128 mm), Nyiregyhaza (118 mm), Josvafo (111 mm), Zahony (107 mm), and Csongrad (106 mm). Above average precipitation was reported from the southeast corner of Transdanubia, the eastern part of the Northern Mountain Region, and 50 percent of the trans-Tisza region, or from approximately 35 percent of the entire area of Hungary. In other areas the precipitation was above 50 percent of the average.

The abundant rains during the last third of August had a very favorable effect on plant growth as well as on plowing and sowing work. The generally clear, sunny, and warm days were highly favorable to the ripening and good quality of vegetables, fruits, and grapes.(2)

9-26 September 1953

The period under review was characterized in the beginning by overcast, rainy, and cool weather and later by dry, clear, sunny days and cool nights. Precipitation was more abundant than during the preceding days.

Diurnal temperatures in the first week were below the average but later rose considerably. Summer weather, with temperatures ranging from 25 to 28 degrees, prevailed on 9 and 10 September but was ended by cool air currents and rains. Ensuing cooler temperatures of 15-20 degrees lasted until the 16th. On the 17th, the warm weather of 25-27 degrees returned and continued in most areas until the 20th. Subsequently, moderate cooling occurred which, on the 24th and 25th, again changed to temperatures of 25-30 degrees.

Nocturnal cooling was occasionally severe for the season. On the 8th, ground frost of 1-2 degrees below zero occurred. Thereafter the nights were mild with the [illegible] fluctuating between 8 and 10 degrees for several days. Due to cold-air currents and consequent nocturnal heat radiation, the temperature fell, to 0-2 degrees in the northwest and south of Transdanubia. At the same time ground frost of 1-2 degrees below zero was reported in several localities in the west and south of Transdanubia and south of the Great Plain. On the following day frost occurred in the north of the trans-Tisza region. Later the nights were generally mild, with the temperature 10-15 degrees.

Precipitation during the period 9-26 September was much more abundant than during the first third of the month. In the period of 1-25 September it exceeded 50 millimeters and, in certain localities in the west of Transdanubia, even 70 millimeters. Extensive areas in Transdanubia and the Great Plain received 25-50 millimeters of rainfall. However, precipitation was less than 25 millimeters in approximately 70 percent of the country and as little as 5-10 millimeters in the northeast and southeast of Transdanubia and in the Danube-Tisza basin.

Precipitation was less than average everywhere. The rainfall from 1 to 25 September was generally less than 50 percent of the average for the month, and many areas received less than 25 percent of the average. Aside from insignificant rains, the entire September precipitation was after the 9th. On the 10th and 11th, there were country-wide rains. On the 20th the rainfall increased, and on the 20th and 22d it was again country-wide. The precipitation assumed greater proportions on the 25th, but the latter date is not included in the appended map.

The generally warm and sunny weather was very favorable to the development and good quality of late-maturing plants. The frequent rains of the last 2 weeks benefited the afterseeds as well as plowing work.(3) (See Figure 2.)

27 September-12 October 1953

The first half of the period under review was characterized by sunny, warm, and dry weather. Later the weather turned very cold.

At first, diurnal warming was unusually intense for the season. The temperature was around 25 degrees after 26 September and rose as high as 30 degrees in some localities in the south during the last days of the month. The summer weather lasted until 4 October. Due to cold air currents accompanied by rains, the diurnal temperature declined to 12-15 degrees during the following days and showed no change until the 11th.

The nights were unusually mild at first. Toward the end of the period, however, cooling was intense for the season. After 4 October the cooling increased in intensity, and on the night of the 7th frost of 1 degree below zero appeared sporadically. During the following nights the frost spread over large areas and continued to increase in severity. On the night of the 10th, freezing temperature of 1-3 degrees below zero was reported in most parts of the country. Ground frost of 1-2 degrees below zero appeared in some areas as early as the night of the 6th. The frost increased during the following nights and reached maximum intensity on the night of the 10th when, frost of 4-5 degrees below zero was country-wide, and the temperature fell as low as 6 degrees below zero in the vicinity of Miskolc. During the next night the frost abated somewhat.

Precipitation was less than average. On 29 and 30 September, abundant rains fell in Transdanubia. As a result, the distribution of precipitation published in our last issue [Figure 2] was modified as follows:

September precipitation was in excess of 50 millimeters in the western part of Transdanubia and as much as 90-100 millimeters along the western border. In a few localities the rainfall was even heavier (109 millimeters at Szentgotthard and 121 millimeters at Lenti). In the rest of the country, precipitation during September remained below 50 millimeters and in most areas even below 30 millimeters. The largest part of the Danube-Tisza basin received less than 10 millimeters.

In general, precipitation in Vas, Zala, and Veszprem megyek in Transdanubia was above the average. However, over 70 percent of the country received less than 50 percent of the average, and in the southeastern part of Transdanubia and throughout the Danube-Tisza basin the precipitation was below the average.

During the period 1-11 October, country-wide rain fell only on the 4th. Thereafter it rained again in large areas on the 5th and 8th. The precipitation on the 8th was in the form of snow in the higher mountain regions, and the peaks of Matra Mountain had a snow cover of 7-8 centimeters for some time.(4)

13-28 October 1953.

Warm and dry weather prevailed in most parts of the country during this 2-week period.

Diurnal warming was greater than usual and, on some days, extremely intense. On 13 October the temperature was 16-18 degrees, which is approximately average for the season. Thereafter the warming became intense, and between the 16th and 18th, summer weather of 25-28 degrees prevailed throughout the country. The temperature was 10-12 degrees higher than the long range average for the season and several degrees above the 30 year record. After 19 October the warming moderated, and after a temporary intense cooling it again reached 20-22 degrees around the 26th.

The nights were unusually mild. After the preceding frosty nights the nocturnal minimums were around 10-12 degrees between the 13th and 21st. After this period, cooling became more severe, and on the night of the 22d, frost of 1-2 degrees zero appeared in many parts of the Great Plain. Thereafter mild nights followed.

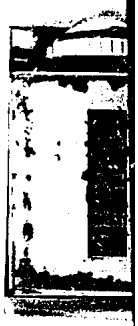
Ground frost appeared in the northeast as early as the night of the 21st. On the following night, ground frost was reported throughout the country east of the Danube with an intensity of 4-6 degrees below zero in the northern Trans Tisza region. The frost disappeared on the following nights but reappeared in the northeast on the morning of the 28th.

There was generally little precipitation. Total precipitation between 1 and 28 October exceeded 50 millimeters only in some areas. Over 50 percent of the country received less than 25 millimeters, and in the south of Transdanubia and in the Great Plain, the rainfall was less than 10 millimeters. With the exception of a few small areas, precipitation was sparse throughout the country. By the 28th, it was less than 50 percent of the October average in more than one half of the country and generally less than 25 percent of the average in the south.

In order of time the distribution of precipitation was as follow:

From 13 to 15 October, light rains fell over one half of the country. After the 15th, extensive rain fell only on the 20th. In addition, it rained lightly in the west and north on 5 days.

Plowing and planting work, as well as recently-sowed plants, is in need of rain throughout Hungary.(5) (See Figure 3.)



29 October-12 November 1953

The continued sunny, warm, and dry weather gave way to overcast, cool, and rainy days toward the end of October.

Diurnal warming gradually lost force. Under the impetus of cool-air currents and rains, diurnal temperatures fell from 20-22 degrees to 12-14 degrees at the end of October. The cooling continued, increasing in intensity, and on the 11th the maximum was only 4-6 degrees.

The nights were largely mild for the season. In most parts of the country the temperatures failed to decline as low as 5 degrees on several nights; however, temperatures below the freezing point were recorded in the east on several occasions. The severity of the frost reached 3 degrees below zero only in the vicinity of Milskolc and Debrecen. Ground frost appeared in several areas practically every night. Its intensity reached 4-5 degrees below zero throughout the country and even 6 degrees below zero east of the Tisza.

Precipitation was abundant and frequent. It started to rain as early as 29 October, and the rainfall during the last days of October increased the total precipitation for the month published in our last issue [Figure 3] by 2-5 millimeters in most of Transdanubia, by 10-20 millimeters along the western border, and by 1-4 millimeters elsewhere.

The period 29 October-7 November was characterized by recurring mild rains. On the 4th, 5th, 6th, and 7th the rains were country-wide, and on four other days more than half of the country received rain. Daily precipitation, especially on the 6th, was in excess of 10 millimeters in several regions. After 8 November the rains stopped.

The precipitation during the first third of November ranged from 15 to 25 millimeters in most areas, thus approximating the average for half of the month and even exceeding it in the north. Including the last days of October, the precipitation during the last 2 weeks was in excess of the average throughout Hungary.

The abundant rains of the period under review were highly beneficial to plowing and sowing operations as well as to plant development.(6)

13-27 November 1953

The period under review was characterized by dry weather. At first, the days were mild and the nights frosty; then, intense cold weather set in abruptly.

Diurnal temperatures varied and were generally high for the season. On several days the air warmed up to 10-13 degrees; on a few days, however, the temperature fell to as low as 3-5 degrees at noon. On the 24th the weather abruptly turned cold. During the following days diurnal maximums declined to 1-2 degrees and even as low as 1-2 degrees below zero.

Nocturnal cooling was generally more intense than usual. On most nights the temperature dropped below the freezing point practically everywhere, and occasionally temperatures of 5-7 degrees below zero were measured. Nocturnal cooling became even more intense on the 24th, and the temperature fell to as low as 10-20 degrees below zero throughout the country during the following nights.

Ground frost was country-wide on most nights, and its severity reached 10-13 degrees below zero in many areas prior to the 20th. During the last two nights of the period under review the temperature declined below 10 degrees below zero practically everywhere. At the same time, ground frost of 15-16 degrees below zero was recorded in Somogy and Baranya megyek in Transdanubia, east of the Tisza, and around Miskolc.

There was little precipitation. Only 5 days brought 1-2 millimeters of rain in isolated areas, especially in the northeast. November precipitation fell mostly in the first third of the month. Precipitation was sparse throughout the country, with more than 50 percent of the average falling only in the northeast. It amounted to 25-50 percent of the average in 70 percent of the country as a whole and to less than 25 percent of the average in the western part of Transdanubia.(7) (See Figure 4.)

28 November-11 December 1953

The period under review was characterized by variable temperatures, fogginess, and sparse precipitation.

Diurnal temperature showed a considerable range and varied from region to region. In the first days of October, warming failed to exceed 1-3 degrees in the northeast. At the same time the temperature was 10-15 degrees and during the first days of November it advanced to 14-16 degrees in the south. Subsequently, temperatures of 7-10 degrees, which are a few degrees above the average, were recorded at the noon hours.

Nocturnal cooling was considerably milder as compared with the preceding weeks. In the early morning hours of 28 November, the temperature was still 6-8 degrees below zero in most areas and even as low as 11 below in the Northern Mountain Region and the Great Plain. Thereafter the cooling moderated. After 1 December temperatures of 5 below failed to occur and increasingly wider areas remained entirely free of frost. On the night of the 11th, frost appeared only in some areas.

On the night of the 27th, ground frost of 10-12 degrees below zero was recorded in several areas of Transdanubia and 15 below in parts of the trans-Tisza region. After 1 December, frost of 5 below occurred only sporadically.

There was little precipitation. Rain of 1-4 millimeters fell only in the northeast during the last days of November. This small amount failed to affect appreciably the distribution of precipitation published in our last issue. During the interval of 1-12 December, precipitation exceeded 5 millimeters only in a few localities of Transdanubia and 10 millimeters along the southwestern border. Approximately 90 percent of the country as a whole received less than 5 millimeters of precipitation, and many areas, especially in the Great Plain, less than one millimeter from misty weather.

The lack of precipitation is being felt, especially in the Great Plain, where considerably less rain fell since September than in other areas of Hungary.(8)

13-30 December 1953

The weather was cold and dry throughout the period under review.

Diurnal temperatures were, as a rule, below the average. During the days following 12 December the maximums were generally 1-3 degrees, corresponding to the average for the season. In certain areas, however, the temperature reached

1-2 degrees below the freezing point. After the 17th the weather turned colder and the diurnal temperatures remained below the freezing point everywhere. On some days the noon temperature fell to 3-5 degrees below zero in many parts of the country and as low as 6-8 degrees below zero in the Great Plain.

Nocturnal cooling was intense. After 14 December the frost was country-wide every night. After the 17th, the frost increased in intensity, and the temperature fell below 10 degrees below zero in a large part of the country. This occurred especially in the Great Plain, although temperatures of 14 below were also reported in the southeast of Transdanubia. Frost of 12-14 degrees below zero was a frequent phenomenon in the Great Plain, and on the night of the 24th numerous localities east of the Tisza reported temperatures as low as 16-17 degrees below zero. During this time the crops were covered by a few centimeters of snow.

After the 15th ground frost of 12-15 degrees below zero was a daily occurrence in the Great Plain, and many Transdanubian areas reported a ground temperature of 15 below. The cooling was severest in the early morning of the 25th, when the temperature dropped to 21 below around Turkeve east of the Tisza and to 23 below in the vicinity of Debrecen.

There was extremely little precipitation everywhere, and the deficiency is aggravated by the fact that the preceding months there was also little precipitation. Precipitation exceeded 25 percent of the average only in the southwestern border area, while nearly half of the country as a whole received less than 10 percent of the average. Most of the precipitation was in the form of snow. After the 19th the snowfalls covered increasingly larger areas, and after the 23d practically the entire country was covered by snow. However, the snowfall was, as a rule, less than one centimeter. Most of the snow fell east of the Tisza, where large areas had 3-8 centimeters. The snowfall of the 29th added a few centimeters in the largest part of the country.

Further abundant snowfalls are needed (9) (See Figure 5.)

31 December 1953-13 January 1954

During this period the weather was colder than average and snow fell abundantly throughout the country.

Diurnal temperatures were low during the entire period. On most days the maximums remained below the freezing point. Noon temperatures generally ranged between 5 and 8 degrees below zero and, on 3 January, fell as low as 12-15 degrees below zero in the central part of the country. After the 10th the cold abated somewhat.

Nocturnal cooling was severe as compared with the average. Frost of 10 degrees below zero was common throughout the country, and the temperature dropped as low as 15-20 degrees below zero in wide areas on several nights. Along the southern border area of Transdanubia and in a large part of the Great Plain the temperature fell below 20 degrees below zero and, on 3 January, as low as 25 below in the vicinity of Kecskemet. Ground frost of below 15 below was frequent, especially in the Great Plain. On a few nights the temperature fell to 20-25 degrees below zero in wide areas. On 3 January the temperature was 29 below in the vicinity of Debrecen.

Precipitation was frequent and abundant in a large part of the country. The country-wide snowfalls of 30 and 31 December modified the precipitation record published in our last issue to the extent that, during December, approximately two thirds of the country received over 25 percent of the average precipitation. However, only 10 percent of the country received more than 50 percent of the average.

During the period 1-13 January, 5 days brought country-wide snowfalls, and on 4 days it snowed in more than half of the country. The precipitation during this period exceeded 10 millimeters everywhere, with the exception of certain northeastern areas. It was in excess of 30 millimeters in a large part of Transdanubia and over 30 millimeters in the west and north of the country, corresponding to the average for the entire month of January. In the vicinity of Sopron and Kapuvar over 50 millimeters was measured.

All precipitation was in the form of snow. The entire area of the country was covered by snow as early as 31 December, and subsequent snowfalls added to the thickness of the snow cover. On the morning of 13 January the snow cover was over 10 centimeters thick practically everywhere and over 30 centimeters in some parts of Transdanubia and of the Northern Mountain Region. Smaller snowdrifts occurred during the period under review, especially in Transdanubia.(10)

14-27 January 1954

This 2-week period was characterized at the beginning by mild weather and later by intense cold and snowfalls.

Diurnal temperatures fluctuated heavily. On 14 and 15 January the temperature was still 2-5 degrees below the freezing point. On the 16th, however, an abrupt change took place and, until the 22d, the temperature fluctuated between 2 and 8 degrees. After the 22d this mild spell again gave way to severe cold which increased in intensity until it reached 10-14 degrees below zero on the 26th.

Nocturnal cooling was more intense than usual. At first the temperature was 12 degrees below zero. Later, the nights were milder and frost was absent in many areas. On the morning of the 23d, however, the temperature again dropped to 10 below. Thereafter the cold increased in severity and reached its lowest point in the early morning of the 27th when temperatures of 20-24 degrees below zero were reported throughout the country. During the entire period under review the plants were protected against the severe cold by an adequate snow cover.

Ground frost in general was a few degrees more intense. The ground temperature stood at 20-22 degrees below zero in numerous areas in the early morning of the 25th and 26th and declined as low as 27 below at Sarospatak and Turkeve and 31 below at Nyiregyhaza on the night of the 26th.

The precipitation value of the snow, which fell between 1 and 27 January, was in excess of 20 millimeters practically everywhere and exceeded 30-40 millimeters in wide areas throughout the country. Considerable areas in the north of Transdanubia received as much as 50-60 millimeters of precipitation. Until 27 January most of the country received more than the average precipitation for the entire month. On the other hand, precipitation in the southern, eastern, and northeastern areas was in general only between 50 and 100 percent of the average. Most of the precipitation was in the form of snow.

Throughout January, the country was covered by snow. Until the middle of the month the thickness of the snow cover varied between 20 and 30 centimeters. In the third week of the month the snow cover became thinner due to the mild weather but failed to melt completely anywhere. In the morning of the 27th the snow cover was generally 10 centimeters thick.

The abundant snowfalls provided protection for the plants against the intense cold; moreover, after the preceding dry months, precipitation had been urgently needed.(11) (See Figure 6.)

28 January-10 February 1954

During the 2 weeks under review the intense cold continued, and milder weather set in only toward the end of the period. Snowfalls were frequent and abundant.

Diurnal temperatures were considerably lower than usual. During the last days of January the temperature everywhere reached 10-15 degrees below zero, and temperatures of 10 below were reported from numerous areas as late as the first days of February. Later, the weather turned gradually milder, and on the 8th and 9th temperatures of 1-4 degrees below zero were measured at the noon hours in most of the country, with the temperature rising as high as 1-2 degrees above zero in the northeast of the Great Plain.

Nocturnal cooling was extremely intense. During the last third of January the cold gradually gained in severity, and the temperature fell to the lowest point for the period on the night of 27 January. On the 27th the temperature dropped to below 20 degrees below zero throughout Hungary and as low as 25-27 below in the northeast. Freezing weather of 20-25 below appeared in wide areas on the night of the 6th and 7th. In the early morning hours of 9 February, on the other hand, the intensity of the cold diminished and the thermometer rose to 5-10 below in most areas, although later the cold again increased in severity.

Minimum ground temperatures occurred in the early morning hours of 27 and 28 January, with the thermometer at 20-25 degrees below zero in wide areas of Transdanubia and as low as 30-31 below in the vicinity of Debrecen and Nyiregyhaza. Ground frost of 25 below was again recorded in numerous areas on 5, 6, and 7 February. As a rule, ground frost extended more than 50 centimeters into the soil.

Precipitation was abundant and in the form of snow. On 29 and 30 January, it snowed throughout the country. The January precipitation map published in our last issue [Figure 6] was thereby modified as follows:

The total for the month was below the average in only one quarter of the area of Hungary, particularly in the southwest of Transdanubia and in the eastern part of the country. In three quarters of the country precipitation was above the average and in certain areas as much as twice the average.

The first third of February brought four country-wide snowfalls; on the other days snow fell in various areas. The snow which fell between 1 and 10 February ranged from 10 to 20 centimeters in most parts of the country and from 20 to 30 centimeters in the south. These figures mean that, during the period of 1-10 February, the amount of precipitation in a considerable part of Hungary was more than 50 percent of the average for a half month.

In the early morning hours of 10 February, the snow cover was generally 20-40 centimeters thick in most of Transdanubia and the Great Plain and as thick as 50-80 centimeters in the Northern Mountain Region. The bottom of the snow cover is usually ice.(12)

10-24 February 1954

Most of the period under review was characterized by colder than average temperature and frequent, light snowfalls.

Diurnal temperatures were variable and mostly low. On 10 February the noon temperature was still 2-5 degrees below zero. Thereafter, until the 17th, the weather was milder and the thermometer in most of the country rose to 2-4 degrees above the freezing point. Later the weather again turned cold, with the thermometer declining to 5-8 degrees below zero.

Nocturnal cooling was also variable. Country-wide frost appeared every night. During the week following 10 February the temperature fluctuated between 1 and 5 degrees below zero, but after the 20th it dropped below 10 degrees below zero throughout the country and even as low as 21 below in numerous areas of the Great Plain. Ground frost of 20 below in the south of Transdanubia and 25 below in several localities of the Great Plain occurred even after 20 February.

Country-wide light snowfalls yielding 2-3 millimeters of precipitation occurred mainly after the 17th. Most of the February precipitation occurred in the first third of the month. With the exception of a very few localities, precipitation during the period under review was sparse everywhere.

Precipitation exceeding 50 percent of the average occurred mostly in the south. Approximately 60 percent of the country received less than half of the average. The snow cover was 30 centimeters thick in the south of the Great Plain and 60 centimeters on the Matra Mountain. It had become hard-packed ice everywhere and contained considerably more water than fresh snow.

In view of the recent weather conditions, early spring weather is unlikely. The melting of the huge mass of snow which extends throughout the country will require a long period of time. Under existing conditions quick melting would not be desirable, since it would have a more harmful effect than a late spring. The reason therefor is that the ground is frozen solid everywhere to a depth of 50 centimeters and the frozen soil could not absorb all of the fast melting snow, although, after the fall drought, every drop of water is needed. Moreover, abrupt melting might result in floods which would retard spring work.

It must also be borne in mind that when spring weather sets in following a long and severe winter, cold waves arriving from the still snowy and cold northern countries would interfere with spring work. For these reasons, Hungarian agriculture will have to make a very great effort during a shortened spring season to perform the spring tasks, which will be even more difficult as a result of the abnormal fall and winter weather.(13) (See Figure 7.)

Coldest February in 14 years

This February has been the coldest February in 14 years. The cold continues unabated, and yesterday temperatures of 15-20 degrees below zero were reported from several parts of the country.

The Meteorological Institute has forecast the arrival of the fifth cold wave for the end of February. After 6 days of severe cold, it forecast milder weather for today (26 February) and melting temperatures for 28 February.

According to the Meteorological Institute, the beginning of next week will also be mild, but in the second half of the week another drop in temperature with snowfall and night frost is expected.

The first days of March will continue cold, but spring weather is expected to set in after 7 March.

The first warm wave in the higher atmosphere appeared yesterday, although it did not make itself felt because the Carpathian basin is covered by a cold air cushion 100-200 meters high.(14)

Abnormal Weather Conditions

Beginning of Abnormal Weather

The current winter is abnormally severe. The weather became abnormal at the end of last summer, when fall precipitation was almost entirely absent and several parts of the country were hit by a drought unparalleled for decades. In many areas the fall sown crops failed to germinate, the rivers and wells dried out, and in general, the country struggled with an extreme water shortage. This made agricultural work extremely difficult, caused trouble in industry, and paralyzed Danube navigation. Even the health of the population was adversely affected by the drought.

Fall drought was followed by severe cold and ground frost in November, damaging the crops which were without a snow cover. The first cold wave arrived as early as the middle of December, when ground frost of 12-15 degrees below zero was an everyday occurrence on the Great Plain.

The cold increased in severity, and a second cold wave arrived in mid-January, with the temperature falling to 10-20 degrees below zero in Transdanubia and as low as 20-25 degrees below zero on the Great Plain. Paradoxically, this cold wave had no damaging effect, because previously it had snowed several times and the crops were protected by a snow cover. In fact, an unbroken, thin sheet of snow covered the country by the end of December, a condition which added to the intensity of the cold during January. As is well known, a large-scale snow cover creates intense cold but protects the crops despite freezing weather.

Country-Wide Snowdrifts

The first surprise in January was caused by extremely heavy, country-wide snowfalls on the 14th. Within the next 24 hours, a 20-30 centimeter (in certain areas 35-40 centimeters) snow cover formed, containing a huge mass of potential water supply equivalent to 2 billion cubic meters or 2 trillion liters. However, the soil failed to absorb any part of this water, which remained stored up pending the arrival of the melting season.

Budapest also had an abnormally heavy snowfall, which lasted uninterruptedly for 24 hours and resulted in a total mass of 720,000 tons of snow lying in the streets, not counting the volume on the housetops and in the courtyards. Had this mass of snow suddenly melted, the streets of Budapest would have been flooded by 720 million liters of water.

The snowfalls were followed by snowdrifts which seriously handicapped traffic. In numerous areas the snow accumulated in mounds, 2-3 meters high, and passage had to be cut through for railroad and highway traffic over a length of many kilometers. Due to the recurring snowfalls, the thickness of the country-wide snow cover continued to gain. The snowdrifts, also continued to reappear and assumed, particularly at the beginning of February, extremely great proportions. For a short time traffic throughout the country was practically at a standstill and extreme measures had to be taken to resume it. On 7 and 8 February huge, warm air masses began to stream in from the south, resulting in another country-wide snowfall. By this time the total snow cover contained 5 billion cubic meters of water, equivalent to 50-60 millimeters of precipitation for the country as a whole.

Causes of Heavy Snowfalls and Snowdrifts

The recurring country-wide snowfalls were caused by the arrival of mild air currents from the south and southeast high above the cold air which had originated at the North Pole and in Siberia and filled the basin of the Carpathian mountain range. On the other hand, the heavy snowfall of 14 January was due to maritime air currents saturated with vapors arriving from the Atlantic Ocean. The mild western and cold eastern air currents collided over Hungary. Since each heavy snowfall was accompanied by wind storms, snowdrifts resulted. Even after the snowfall had stopped, temperatures of 5-10 degrees below zero, together with the loose structure of the snow cover and strong winds, were eminently suitable to cause snowdrifts. The snowdrifts attained the greatest violence in the northeastern and northwestern parts of the country. This may be explained by the fact that the stormy north wind, after crossing the lower ridges of the northeastern Carpathians, gained in strength as if passing through a funnel.

Importance of the Heavy Snowfalls

The great advantages which will accrue to Hungary's agriculture and water economy from the huge and extensive snowfalls may be summarized as follows:

a. Protection for the fall-sown crops against cold weather.

b. Large volume of potential water supply for agriculture. A one-centimeter fresh snow cover per one square centimeter of ground yields one liter, that is, one kilogram of water. This water supply currently is being stored up and will drain into the soil when melting sets in. The water thus gained will be extremely valuable for Hungary's agriculture and water economy.

c. Enhanced water supply for industry, which, as a result of the drought, was in a very difficult situation last fall.

d. The extremely low water level of the Hungarian rivers, especially the Danube, has been considerably raised by the snowfalls.

Comparable Heavy Snowfalls

Heavy and prolonged snowfalls comparable to those of the current winter generally occur once in 10 years in Hungary. During the last 50 years, similar or even greater snowfalls were recorded in 1906-7, 1928-29, and 1939-40. Heavy snowfalls resulting in serious difficulties and even disasters occurred, of course, before 1906 also.

Preserve As Much Precipitation As Possible

In view of the fall drought, it is imperative to preserve for the soil all of the precipitation which fell during the current winter. The best method is the use of snowplows, since the ridges thrown up by snowplows prevent the water from running downhill on sloping terrain. Protection must also be provided against snowdrifts. Ridges with shallow ditches between them are suitable to break the force of the wind and to prevent the snow from being blown away. It is also advisable to erect snow fences or trestles.

Cause of "Siberian" Cold. Immediate Tasks

The first cold wave hit Hungary in December and the second and third in January. Throughout the country, the thermometer dropped below 20 degrees below zero, an abnormally low temperature in Hungary. The low was 27 below with a ground temperature of 31 below at Nyiregyhaza. The air cooled off well below 20 below even in the south, reaching 24 below at Szeged and Bekescsaba. The third cold wave, on 27 and 28 January, was quickly followed by the fourth at the beginning of February, when the cold was severest in Bekes Megye with the temperature at 25 below.

The cold air responsible for the last cold wave arrived from the Arctic and Siberian regions. Its temperature was, however, only 10-15 degrees below zero, and it cooled off to 24-30 degrees below zero in Hungary as a result of the snow cover. When an unbroken snow cover exists, the sun may shine for 8-10 hours during the day without warming the air, because the sun's rays are reflected. Again, during the relatively long nights intense cold is produced by a vigorous heat radiation. Consequently, diurnal temperatures were as low as 10-15 degrees below zero on many days, with numerous areas averaging less than 15 below, that is, 15 degrees below the long-range average.

In general, snow and intense cold raged furiously during recent months not only in Hungary but all over Europe. It would be unwarranted to draw conclusions from the abnormally cold winter weather as to the time when spring will set in or the weather which will prevail during the next summer. It is imperative to make full use of the potential water content of the snow cover. The melting of the huge masses of snow and of the thick ice which covers the rivers will, of course, depend on the weather. The rapidity of the melting will also govern the extent of the possible spring floods.(15)

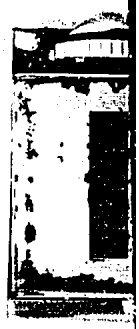
II. CROP CONDITIONS

Tasks of Tractor Station Agronomists

Although the most favorable time for the sowing of fall barley, rye, and wheat is past, less than 50 percent of the national fall-sowing plan has been fulfilled, while rye and wheat sowing has been performed only in a few areas.

The agronomists of the tractor stations have an important task to fulfill in assuring that fall work is performed properly. During the last several years the work of the tractor stations has been deficient. The principal sources of trouble were failure to adjust the sowing machines for the proper amount of seed, irregular intervals between rows, and insufficient sowing depth.

Cereal sowing is adequate only if it is performed in a depth of 3-5 centimeters and 50-60 rye kernels or 55-65 wheat kernels are sown per meter.(16)



Fall Plowing and Sowing Must Be Speeded Up

Although plowing and sowing were begun throughout the country a few weeks ago, it is evident that the work performed so far has been unsatisfactory both in quantity and quality.

The volume of fall work may be measured by the following figures: (a) the corn, sunflower seed, potato, sugar beet, and turnip crops must be gathered in on more than 3 million cadastral yokes; (b) deep plowing and sowing for fall cereals must be performed on more than 3 million cadastral yokes; and (c) deep plowing for corn, sunflowers, potatoes, and sugar beet must be performed on 4 million cadastral yokes. All this work must be completed within the next few weeks.

Currently, deep plowing for fall grains is lagging behind in most areas, particularly in Csongrad, Bekes, Heves, Becs-Kiskun, Baranya, and Borsod megyek. These counties have not only failed to make adequate preparations for fall work, including the repair of tractors, but are also lagging behind in the harvesting of the corn, potato, and sunflower seed crops. As a result, deep plowing in preparation for sowing has been seriously retarded.

Another source of the delay in deep plowing is the fact that neither the draft animals nor the tractors are being adequately exploited. In many areas the animal teams are idle and hardly one third of the tractors are employed in two shifts. Consequently, more than 2,000 10-hour tractor shifts are lost per day and the delay in harvesting and plowing also handicaps sowing operations. Yet it is well known that late sowing, even under the most favorable weather conditions, causes a loss of 3-4 quintals per cadastral yoke in fall barley and rye crops (17)

The Bread-Grain Sowing Must Be Completed

Plowing and sowing of bread grains is still seriously lagging behind in numerous parts of the country, particularly in Csongrad, Bekes, Becs-Kiskun, Baranya, and Pest megyek. The pace, both of producers' cooperatives and independent peasants, is so slow that the national bread-grain sowing plan will be fulfilled even by mid-November.

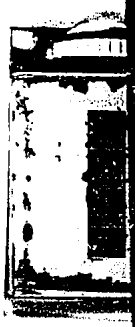
The time limit for the sowing of bread grains expired on 31 October, but the sowing plan has been fulfilled only 60 percent. The principal reasons for this unsatisfactory showing are: (a) lack of cooperation between the tractor stations and the local councils, (b) incompetence of megye and jaras agronomists, (c) excessive paper work required of agronomists, etc.

Discipline is also poor. For example, in several areas the tractors have frequently been idle for days because the operators quit work to attend to their own household farms.

Corn cutting and the harvesting of sunflower seeds are still lagging behind the schedule and are progressing at a snail's pace, which, in turn, is holding up plowing and sowing.(18)

Spring Work Delayed

At the recent conference of agronomists, the chief agronomist of the Machine Station Directorate stated that "spring work will be begun with a delay of 3 weeks this year."



The most urgent task at present is the sowing of spring wheat, because any further delay will be considerably harmful to the crops. The second and third most important tasks are manuring and protection of the plants against frost damage.(19)

Minister Warns of Spring Rains

At the recent conference of agronomists, Minister of Agriculture Andras Hegedus said that "spring work faces certain difficulties. It was begun with a delay of 2 weeks, and in all likelihood there will be a great deal of rain during the spring."(20)

[The following two items are from Uj Hungaria, an emigre weekly.]

Hungary Threatened by Catastrophic Food Shortage

Hungarian agriculture is in a critical situation due to the precarious condition of the crops sown last fall, as evidenced by the recent confused actions of the government.

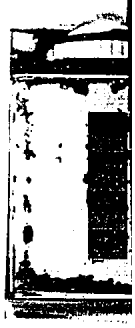
Pressure has been brought to bear on the independent peasants to use all stable manure for surface manuring on the top of a 50-centimeter snow cover. The peasants protested against this wasteful method and argued that it would, at best, produce a crop of 1-2 quintals of wheat per cadastral yoke, whereas if the manure is plowed under, the land would be benefited for 4 years.

There is little fertilizer available and, according to Minister of Agriculture Andras Hegedus, the independent peasants are reluctant to buy superphosphate at 90 forints and Pet salt at 96 forints [per quintal].

The present ruinous condition of the crops is described in the 14 March issue of Szabad Fold, the party organ published for the rural communities. The report states that now, after the melting of the snow cover, "not a single green spot is visible" in Bekes Megye, one of the most fertile megye, and that the situation is similar throughout the Great Plain. In many areas, Szabad Fold states, the frozen wheat plants are plowed out and the land is to be seeded with barley. Hungary is faced with a food crisis, since only half of the average wheat crop is expected this year.

The Hungarian press and radio openly admit that the fall-sown barley crop was ruined last December, when the temperature fell to 15-20 degrees below zero and no snow cover had yet developed. Encouraged by the better-than-average fall barley crop of 2 years ago, the government pushed the sowing of fall barley, although it is not frost-resistant and therefore risky under Hungarian conditions. Previously, this variety was sown only to a negligible extent. Last year, however, a government decree made it mandatory to plant 62 percent of the entire barley area in fall barley. As a result, the barley crop was ruined on several hundred thousand cadastral yokes.

As regards spring wheat and rye, sowing could not be started even as late as mid-March, and at present the independent peasants refuse to sow it in view of the lateness of the season.



The government blames the drought for the ruin of the crops sown last fall. However, this excuse is not valid. The end of the summer brought abundant rains and, in addition, 66 millimeters of precipitation fell during the fall. However, the moisture could not be conserved due to the lack of plows and other agricultural implements. Stubble plowing was neglected throughout the country, and fall plowing was performed only once instead of three times as heretofore.

Another factor which delayed sowing was the resistance of members of producers' cooperatives who were planning to withdraw from the cooperatives and refused to plant cooperative land. Permission to withdraw was put off until October, and individual holdings were not assigned to the withdrawing members even at that late date. As a result, planting was delayed on one million cadastral yokes of land.

Yet another reason for the crop failure is the shortage of agricultural machines and implements. At the conference of tractor operators held last week, it was officially admitted that only 10,000 tractors are in operation in agriculture, that is, fewer than before the war. Last year, the state farms and producers' cooperatives had 4 million cadastral yokes of land, and the tractors failed to work 400 cadastral yokes on the average.

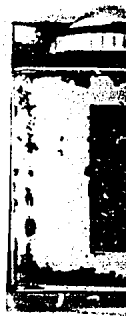
The independent peasants still possess horses, but their implements are worn out. In this connection, the press is made to open attacks on the government. Thus, in its 14 March issue of Szabad Fold published letters to the editor signed by several hundred independent peasants, complaining about the lack of plows, harrows, and seeders. Szabad Fold accused the Ministry of Metallurgy and Machine Industry of sabotage, and stated that only 230 horse-drawn plows had been produced so far in 1954, as compared with the 12,500 promised for the entire year. The newspaper added that the Wilhelm Pieck Railroad Car and Machine Works of Gyor had undertaken to manufacture 5,000 horse-drawn plows in 1954 but had not turned out any during the first 2 months of the year, and that the Kishunfelegyhaza and Borsod machine factories had produced only 418 harrows and 24 sowing machines out of a total of 12,000 and 1,500, respectively, planned for 1954. The latter factories are placing the blame for the nonfulfillment of their plans on unsatisfactory raw materials. As a result, the peasants were forced to return to planting by hand as practiced in the last century. (21)

Distribution Seed at "Interest" in Hungary

Supplementing previous reports on the deplorable state of Hungarian agriculture, it is said that, due to inadequate deep plowing and the abnormally severe winter, a large part of the fall-sown crops has been ruined. The damage due to frost is approximately 50 percent in Fejer, Szolnok, Csongrad, and Bekes megyek and 25 percent elsewhere.

To relieve the situation, the government has issued a confidential decree on the distribution of seed for spring sowing to the producers' cooperatives and independent peasants.

This action is not only too late but also tricky. The decree states that seed will be issued on condition that after the harvest it would be returned in kind with "interest." Producers' cooperatives would have to deliver 5 percent and independent peasants 15 percent of interest in kind. (22)



SOURCES

1. Budapest, Magyar Mezogazdasag, Vol VIII, No 17, 1 Sep 53 (Article signed by Istvan Kulin)
2. Ibid., Vol VIII, No 18, 16 Sep 53 (Article signed by Istvan Kulin)
3. Ibid., Vol VIII, No 19, 1 Oct 53 (Article signed by Istvan Kulin)
4. Ibid., Vol VIII, No 20, 16 Oct 53 (Article signed by Istvan Kulin)
5. Ibid., Vol VIII, No 21, 1 Nov 53 (Article signed by Istvan Kulin)
6. Ibid., Vol VIII, No 22, 16 Nov 53 (Article signed by Istvan Kulin)
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9. Ibid., Vol IX, No 1, 1 Jan 54 (Article signed by Istvan Kulin)
10. Ibid., Vol IX, No 2, 16 Jan 54 (Article signed by Istvan Kulin)
11. Ibid., Vol IX, No 3, 1 Feb 54 (Article signed by Istvan Kulin)
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13. Ibid., Vol IX, No 5, 1 Mar 54 (Article signed by Istvan Kulin)
14. Budapest, Esti Budapest, 26 Feb 54
15. Budapest, Magyar Mezogazdasag, Vol IX, No 4, 16 Feb 54 (Article signed by Dr Alfred Zarn, Deputy Director of the Meteorological Institute)
16. Ibid., Vol VIII, No 19, 1 Oct 53 (Article signed by Gabor Soos)
17. Ibid., Vol VIII, No 18, 16 Sep 53 (Article signed by Bela Gonda)
18. Ibid., Vol VIII, No 21, 1 Nov 53 (Article signed by Bela Gonda)
19. Budapest, Nepszava, 12 Mar 54
20. Ibid., 17 Mar 54
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22. Ibid., 9 Apr 54

Precipitation Distribution

AUGUST

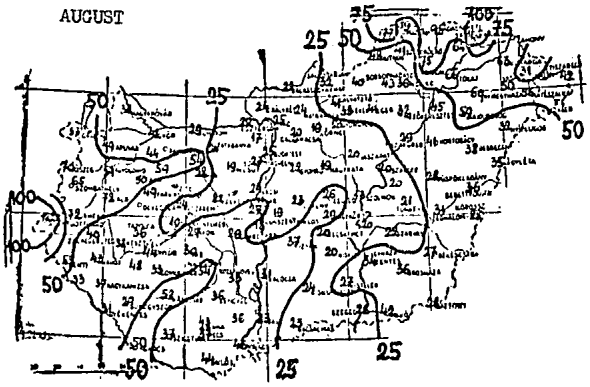


Figure 1

Precipitation Distribution

SEPTEMBER

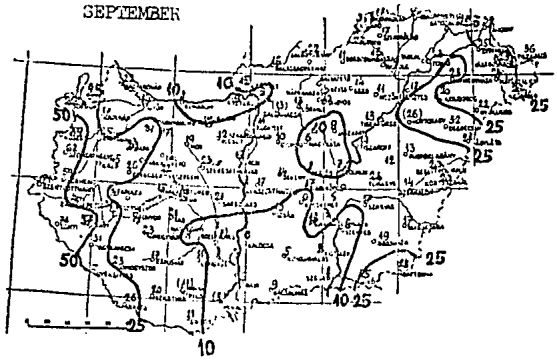


Figure 2

Precipitation Distribution

OCTOBER

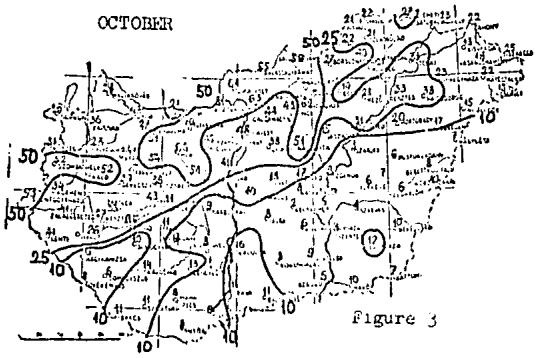


Figure 3

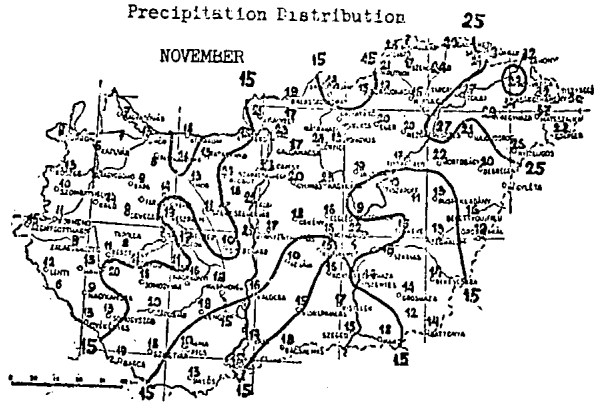


Figure 4

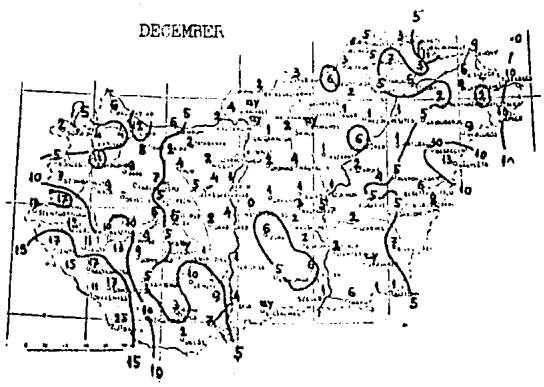


Figure 5

50X1-HUM

Precipitation Distribution

JANUARY

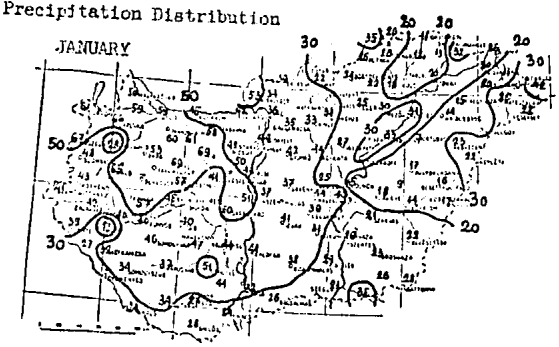
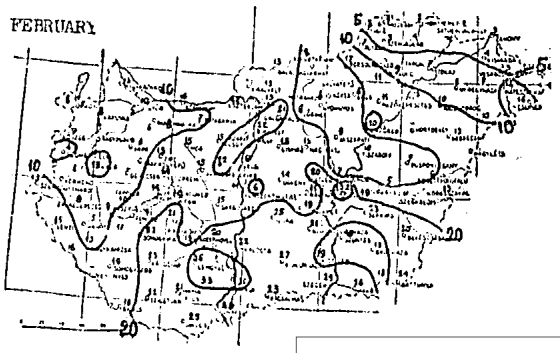


Figure 6

Precipitation Distribution

FEBRUARY



50X1-HUM

Figure 7

623.43 37M
623.417 37M
623.442 37M
853.3 37M
723.21 37M
723.9 37M
722.5 37M
723.11 37M
723.6 37M
722.1 37M